**PDB11**

### DIFFERENCES IN HYPOGLYCEMIA EVENT RATES AND ASSOCIATED COST-CONSEQUENCE IN PATIENTS INITIATED ON LONG-ACTING AND INTERMEDIATE-ACTING INSULIN PRODUCTS

Bullano MF[1], Al-Zakwani I[1], Barron JJ[1], Menditto L[2], Willey VJ[1]
[1]Health Core, Newark, DE, USA; [2]Aventis Pharmaceuticals, Inc, Parsippany, NJ, USA

**OBJECTIVES:** To compare hypoglycemia event rates and the associated cost-consequence in patients initiated on long-acting analogue insulin (glargine) or intermediate-acting insulins (NPH). **METHODS:** This was a longitudinal administrative claims database analysis from a managed care perspective using a retrospective cohort design. Data were obtained from a large southeastern US managed care plan with approximately 2.5 million quality data lives. All patients newly initiated on glargine or NPH between July 1, 2000 and August 31, 2002 were identified (no use of glargine/NPH in the 4 months prior to index date). Hypoglycemia event rates were identified by the presence of medical claims with ICD-9-CM codes. Analyses were performed using multivariable regression techniques. **RESULTS:** The sample size was 1434 patients (glargine = 310, NPH = 1124). Mean age was 53 ± 17 years; 51.5% were male. Mean treatment duration was 9 ± 4 months. After controlling for A1C and other cogent demographic and clinical variables, patients in the NPH cohort had a higher hypoglycemia event rate than the glargine group (18.3 versus 7.3 per 100 patients/year; $p = 0.009$). This event rate yielded a number-needed-to-treat of nine patients (glargine versus NPH) to avoid one hypoglycemia event per member per year (PMPY). Mean cost per hypoglycemia event was $1087 (95% CI: $764–$1409). Mean annual index medication costs for the glargine cohort were $47 more PMPY compared to the NPH cohort ($390 versus $343; $p = 0.042$). **CONCLUSIONS:** Patients treated with glargine had a lower hypoglycemia event rate compared to NPH. The increased cost associated with treating nine patients with glargine for one year (i.e., 9 × $47 = $423) is less than the cost to treat one hypoglycemic event ($1087).

**PDB12**

### ESTIMATING THE REDUCTION IN LONG TERM COMPLICATION AND COSTS OF COMPLICATIONS IN TYPE 1 DIABETES BY REDUCED A1C LEVELS DUE TO MORE FREQUENT BLOOD GLUCOSE MONITORING

Nicklasson L[1], Palmer AJ[2], Roze S[2]
[1]Novo Nordisk Pharmaceuticals Inc, Princeton, NJ, USA; [2]CORE Center for Outcomes Research, Basel, Switzerland

**OBJECTIVES:** To simulate the impact of increased daily blood glucose monitoring on risk of late complications for Type-1diabetes patients. **METHODS:** Previous studies have shown a relationship between increased daily blood glucose monitoring (BGM) and reduced A1C levels for Type-1 diabetes patients. This analysis quantifies the reduced risk for complications and estimates the lifetime costs for complications by modeling the effects of BGM induced lower A1C levels over a lifetime. A standard Monte Carlo simulation combining published literature for risk of long-term diabetic complications with risk functions for each complication was used. Clinical outcomes were based upon following diabetic complications: cardiovascular, neuropathy, nephropathy, retinopathy, keto-and lacto acidosis and hypoglycemia. Lifetime costs for complications were calculated as the yearly costs treating the different complications (US Medicare perspective) over a 50-year period. Clinical outcomes and lifetime costs were discounted at 3%. Patient baseline data were taken from a representative cohort of newly diagnosed type-1 diabetes patients. The effect of testing BG on A1C was taken from published literature, which showed that the reduction in A1C values from baseline was 0.70% ($p < 0.001$) by having one daily BGM. Other studies have found similar reductions. **RESULTS:** The difference in QALY was 0.46 years (LYG was 0.37 years) and lifetime cost was lower, due to fewer complications for the group with more frequent BGM ($54,800 vs. $60,900 per patient over time). Furthermore, clinical outcomes showed that the largest difference in reduced risk for complications was for nephropathy where the risk was reduced by more than half in the group which did more BG test. Sensitivity analyses support the validity and reliability of the results. **CONCLUSIONS:** This study showed the importance of BG testing on the risk of complications for Type 1 diabetes patients. The reduced risk for complications translates into less costs and thus less burden for the patients and the society.

**PDB13**

### PHARMACY AND MEDICAL RESOURCE UTILIZATION AMONG INITIAL METFORMIN AND THIAZOLIDINEDIONE PATIENTS

Shaya FT[1], Shin JY[1], Mullins CD[1], Foster S[2], Fatodu H[2]
[1]University of Maryland, Baltimore, MD, USA; [2]Johns Hopkins Health care LLC, Glen Burnie, MD, USA

**OBJECTIVE:** To compare prescription and medical resource utilization by patients in Maryland Medicaid plans who are initiated on thiazolidinediones (TZDs) versus those initiated on metformin. **METHODS:** This study includes a prospective nonconcurrent analysis of prescription and medical claims for Maryland Medicaid patients who were initiated on metformin or TZDs between June 15, 2000 and June 15, 2002. We ran univariate, bivariate, and multivariate models, examining the associations between the likelihood of being initiated on a TZD and age, gender, race, county of residence, coverage group, and days supply, as well as variables to assess resource utilization: drug count, total pharmacy claims, unique diagnoses count, and total medical claims. Logistic regression models were used to assess the combined effect of all utilization variables on the likelihood of incident use of TZDs or metformin, adjusting for demographic variables. We also tracked the use of metformin and TZDs in this population. **RESULTS:** The sample of 4440 patients was mostly female (71.19%), older (52.58% over 49 years old) and African American (58.84%). Patients with higher numbers of unique diagnoses (OR = 1.6, $p = 0.0071$), prescription claims (OR = 1.5, $p = 0.0813$), and unique drugs (OR = 1.7, $p = 0.028$) were more likely to have received TZDs first line. Those patients with higher numbers of medical claims (OR = 0.5, $p = 0.0029$) were less likely to have been started on TZDs. Among patients started on metformin, 84% did not have subsequent use of TZDs. Among those started on TZDs, 82% did not use metformin. **CONCLUSIONS:** Results show that patients initiated on TZDs are more likely to have subsequently higher utilization of prescription resources, even after adjusting for demographic variables. These patients were also likely to use less medical resources than metformin initial users.

**PDB14**

### PROPENSITY SCORE METHODS FOR REDUCING BIAS IN THE COMPARISON OF COSTS AND UTILIZATION BETWEEN INSULIN LISPRO AND REGULAR INSULIN

Chen K[1], Chang E[1], Summers K[2], Obenchain RL[3], Yu-Isenberg K[1], Sun P[3]
[1]Prescription Solutions, Cost Mesa, CA, USA; [2]Purdue University, West Lafayette, IN, USA; [3]Eli Lilly and Company, Indianapolis, IN, USA

**OBJECTIVE:** To compare results from two approaches—propensity score binning or matching—for reduction of selection